

REMARKS

In response to the Final Office Action mailed May 29, 2008, Applicant respectfully requests reconsideration. Claims 1-20 were previously pending in this application. In this paper, claims 1, 3, 4 and 6 have been amended. Claim 5 has been cancelled without prejudice or disclaimer. No new claims have been added. As a result, claims 1-4 and 6-20 are pending for examination, with claims 1, 4 and 9 being independent claims. No new matter has been added.

I. Interview Summary

Applicant would like to thank Examiner J. Smith for agreeing to discuss the application during a telephone interview with Edmund J. Walsh and Usman A. Khan of Wolf, Greenfield, & Sacks P.C. on August 20, 2008.

During the interview, the claims and references were discussed. Remarks and amendments made herein may serve as a further summary of the interview.

II. Overview of the Disclosure

As an aid to the Examiner, Applicant provides a brief summary of the disclosure contained in the present application. This summary is not intended as a substitute for the Examiner reading the application in its entirety and is not intended to characterize the claims or any terms used in the claims, which are discussed individually below.

Briefly, the present application describes an improved digital message transmission protocol for transmitting digital messages between a monitoring circuit and an analysis tool of a microprocessor. In this method, a message is divided into a plurality of data packets, which are further divided into segments. Each segment can be classified as one of the following types of segments:

- a segment containing a message start (SM);
- a segment containing intermediary data (MD);
- a segment containing a packet end (EP);
- a segment containing a message end (EM); or
- an empty segment (ID).

Applicant describes an improved digital message transmission protocol in which a segment is classified as a message end if the segment represents the start and end of a digital message. A segment is classified as a packet end if the segment represents the start of a digital message and the end of a packet of the digital message. Both classifications help reduce the number of data packets that need to be transmitted thus improving the overall efficiency of the digital message transmission protocol.

III. Rejections Under 35 U.S.C. §112

Claim 5 is rejected under 35 U.S.C. §112, first paragraph and second paragraph, for purportedly failing to comply with the enablement requirement and for purportedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. In particular, the Office Action contends that the subject matter of claim 5 is not described in the specification in such a way as to enable one skilled in the art to which it pertains to make and/or use the invention. Furthermore, the Office Action alleges that it is unclear how a message that is long enough to be transmitted in two segments is shorter than a segment.

Applicant has cancelled claim 5 herein without prejudice or disclaimer. Accordingly, withdrawal of the rejection of claim 5 under 35 U.S.C. §112 is respectfully requested.

IV. Rejections Under 35 U.S.C. §103

Claims 1-8 are rejected under 35 U.S.C. §103(a) as purportedly being obvious over Nexus 5001 Forum, "Standard for a Global Embedded Processor Debug Interface," IEEE-ISTO, pages 5, 28-29 and 92-97 of 150 ("Nexus"), in view of U.S. Patent No. 5,822,321 ("Petersen"). Claims 9, 10 and 14-17 are rejected under 35 U.S.C. §103(a) as purportedly being obvious over Nexus in view of U.S. Patent Publication No. 2003/0091056 ("Walker"). Claims 11-13 and 18-20 are rejected under 35 U.S.C. §103(a) as purportedly being obvious over Nexus in view of Walker, and further in view of Petersen. Applicant respectfully traverses these rejections.

A. Discussion of Nexus

The Nexus 5001 Forum is a standard related to developing an embedded processor debug

interface standard for embedded control applications. In Nexus, a message can be divided into packets of variable sizes and each message is divided in segments. Each segment can be classified as one of five categories, namely Start Message (SM), Normal Transfer (NT), End Packet (EP), Idle (ID), and End Message (EM). As shown in Figs. 8-1 and 8-2 and Tables 8-1 and 8-2 (pgs. 93 to 96) the Nexus 5001 Forum standard does not allow any of the following sequence of segments to be transmitted:

- 1) an end packet segment after an end message segment;
- 2) an end packet segment after an Idle segment; and
- 3) an end message segment after an end message segment.

B. Discussion of Petersen

Petersen is related to a telecommunications system that uses asynchronous transfer mode (ATM) with the ATM adaption layer (AALm) protocol as a data transfer infrastructure (Abstract). Petersen discloses a method and apparatus for segmenting and reassembling user data packets. For example in Fig. 5 and in Col. 4, lines 7-41, Petersen discloses a packet that is divided into segments (minicells), all of which have the same fixed length except for the last segment (Col. 3, lines 66-67). The minicells are transmitted using ATM cells (Col. 3, lines 33-44). Each segment is assigned one of three types of headers, namely "first segment," "middle segment," or "last segment" (Col. 4, lines 25-33).

C. Discussion of Walker

Walker is related to a communication system for driving pairs of twisted pair links (Abstract). The communication system includes an encoder/decoder and a pair of transformers connected to twisted pair links for transmitting/receiving dc balanced data strobe signals (Abstract, Fig. 1). The encoder's coding scheme and associated state diagrams are illustrated in Figs. 9, 10 and 16.

D. Independent Claim 1

Claim 1, as amended, recites, *inter alia*, "wherein a segment of the successive segments representing the start and the end of the digital message is classified as a message end, and a

segment of the successive segments representing the start of the digital message and the end of a first packet of the digital message is classified as a packet end.”

The Office Action alleges that the combination of Nexus and Petersen teaches or suggests all limitations of claim 1. The Office Action concedes that Nexus fails to teach characterizing a segment as a message end or a packet end, as recited in Applicant’s claim 1, and relies on Petersen for curing this deficiency. Applicant respectfully disagrees.

Applicant respectfully submits that the Office Action is inconsistent in the rejection of claim 1. For example, in pg. 6, ¶2 of the Office Action, the Examiner refers to Petersen’s data packet as allegedly corresponding to the digital message in Applicant’s claim 1 and Petersen’s minicell as allegedly corresponding to a segment in Applicant’s claim 1. However, in pg. 6 ¶3 of the Office Action, the Examiner refers to Petersen’s ATM cell as allegedly corresponding to the segment in Applicant’s claim 1, Petersen’s minicell as allegedly corresponding to a packet in Applicant’s claim 1, and Petersen’s data packet as allegedly corresponding to the digital message in Applicant’s claim 1. Thus, the Office Action refers to Petersen’s minicell as corresponding to claim 1’s segment in pg. 6, ¶2 of the Office Action and as corresponding to claim 1’s data packet in pg. 6, ¶3 of the Office Action. Applicant has however clearly distinguished between packets and segments in claim 1 by reciting “dividing each data packet into successive segments.” In view of the foregoing, the Office Action’s rejection of claim 1 is improper for inconsistently equating elements of claim 1 to elements taught in Peterson.

Even if one of ordinary skill in the art were to accept the Office Action’s assertion that Petersen’s ATM cell corresponds to a segment in Applicant’s claim 1, Peterson fails to teach element b and the “wherein” clause of Applicant’s claim 1. Element b recites “sending at the same time as each segment of the successive segments, an identification signal characterizing the type difference between the considered segment and the previous segment.” The “wherein” clause specifically recites types assigned to certain segments. Petersen fails to teach or suggest an identification signal sent along with the ATM cell, such that the identification signal characterizes the difference between one ATM cell from the previously sent ATM cell, as recited in claim 1.

In view of the foregoing, Nexus and Peterson, considered alone or in combination, fail to teach or suggest all limitations of claim 1. Therefore, claim 1 patentably distinguishes over

Nexus and Peterson and is in condition for allowance. Withdrawal of the rejection of claim 1 is respectfully requested.

Claims 2 and 3 depend from claim 1 and are patentable based at least upon their dependency.

E. Independent Claim 4

The Office Action rejected claim 4 for reasons similar to those used to reject claim 1. Accordingly, Applicant's argument above in favor of the patentability of claim 1 applies similarly to claim 4.

Accordingly, withdrawal of the rejection of claim 4 is respectfully requested.

Claims 6-8 depend from claim 4 and are patentable based at least upon their dependency.

F. Independent Claim 9

The Office Action alleges that the combination of Nexus and Walker teaches or suggests all limitations of claim 9. The Office Action concedes that Nexus fails to teach "wherein the first segment is classified as either an empty segment or a message end and the second segment is classified as either a packet end or a message end," as recited, *inter alia*, in Applicant's claim 9, and relies on Walker for curing this deficiency. Applicant respectfully disagrees.

The Office Action cites Fig. 16 and ¶¶150-152 and ¶¶186-187 of Walker as allegedly teaching said limitation of claim 9. However, the cited figure and passages fail to teach said limitation of claim 9. ¶¶150-152 describe Figs. 9 and 10 of Walker. Figs. 9 and 10 are related to an encoder and state diagram for a state machine to implement a ternary encoding scheme. ¶¶150-152 are unrelated to defining types of segments as claimed.

¶¶186-187 describe Fig. 16, which illustrates a state diagram for either a data state machine or a strobe state machine. The Examiner contends that because Fig. 16 allegedly teaches an active state corresponding to LAST_PACKET_LEVEL WAS_EOP_OR_EOM, Walker implicitly teaches a condition where it is possible to have two successive conditions where end of packet/message segments are received successively. However, this figure and cited passage relates to transitions in a state machine that allow a serial transceiver to enter a standby mode (¶¶168-178, ¶186). Walker's Fig. 16 does not disclose a next active state in which a packet level is an end of message or an end of packet. In fact, none of the succeeding states from

the LAST_PACKET_LEVEL WAS_EOP_OR_EOM illustrated in Fig. 16 indicate an end of packet or end of message state. Walker includes LAST_PACKET_LEVEL WAS_EOP_OR_EOM in Fig. 16, without any corresponding explanation in the specification of Walker. Though, as understood, Fig. 16 relates to transmissions at the bit level and does not relate to communicating messages using packets or segments as in claim 9. Accordingly, the Office Action's assertion that Walker teaches the "wherein" clause of claim 9 has no support in Walker. The Office Action also fails to provide any rationale or support as to why Walker would implicitly teach said limitation of claim 9.

Accordingly, Nexus and Walker, considered alone or in combination, fail to teach or suggest all limitations of claim 9. Therefore, claim 9 patentably distinguishes over Nexus and Walker and is in condition for allowance. Withdrawal of the rejection of claim 9 is respectfully requested.

Claims 10-20 depend from claim 9 and are patentable based at least upon their dependency.

V. Comments on Dependent Claims

Since each of the dependent claims depends from a base claim that is believed to be in condition for allowance, Applicant believes that it is unnecessary at this time to argue the allowability of each of the dependent claims individually. However, Applicant does not necessarily concur with the interpretation of the dependent claims as set forth in the Office Action, nor does the Applicant concur that the basis for the rejection of any of the dependent claims is proper. Therefore, Applicant reserves the right to specifically address the patentability of the dependent claims in the future.


CONCLUSION

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

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Respectfully submitted,

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